

**Texas State Soil and Water Conservation Board  
 Clean Water Act §319(h) Nonpoint Source Grant Program  
 FY 2018 Workplan 18-05**

<b>SUMMARY PAGE</b>	
<b>Title of Project</b>	Sustained Delivery of the Texas Watershed Steward Program
<b>Project Goals</b>	<p>Facilitate statewide implementation of the Texas Watershed Steward (TWS) program through watershed-based group trainings and computer-based distance training components.</p> <ul style="list-style-type: none"> <li>• Increase stakeholder involvement in Watershed Protection Plan (WPP) and/or Total Maximum Daily Load (TMDL) development processes by educating and organizing local citizens.</li> <li>• Promote healthy watersheds by increasing citizen awareness, understanding, and knowledge about the nature and function of watersheds, potential impairments, and watershed protection strategies to minimize NPS pollution.</li> <li>• Enhance interactive learning opportunities for watershed education across the state and establish a larger, more well-informed citizen base.</li> <li>• Empower individuals to take leadership roles in community and watershed-level water resource issues.</li> </ul>
<b>Project Tasks</b>	(1) Project Administration; (2) Coordinate and deliver watershed-based TWS trainings in selected watersheds throughout Texas; (3) Distribute and Manage computer-based training tools for the TWS program; (4) Evaluate the effectiveness of the TWS watershed-based trainings and computer-based training tools.
<b>Measures of Success</b>	<ul style="list-style-type: none"> <li>• Deliver a minimum of 32 watershed-based TWS trainings in selected watersheds. Workshops may be delivered virtually on a singular basis if determined necessary by TSSWCB and Texas A&amp;M AgriLife Extension in response to local, state, or agency guidelines concerning Coronavirus Disease 2019 (COVID-19).</li> <li>• Number of citizens participating in watershed-based TWS trainings.</li> <li>• Number of citizens utilizing the computer-based training components of the TWS program.</li> <li>• Increased knowledge and understanding of watershed management by individuals participating in the program, as measured by pre-/post-tests and 6-month follow-up evaluations.</li> </ul>
<b>Project Type</b>	Implementation ( ); Education (X); Planning ( ); Assessment ( ); Groundwater ( )

Status of Waterbody on 2014 Texas Integrated Report	Segment ID	Parameter of Impairment or Concern	Category
	0207	Bacteria	5b
	0612	Bacteria	5b
	0901	Bacteria, PCBs and Dioxin	5c, 5a, 5a
	1105	Bacteria	5c
	1103	Bacteria, Depressed DO	5a
	1804A	Bacteria	5c
	2311	Depressed DO	5c
	1209	Bacteria	5c
	1217D	Depressed DO	5c
	1221	Bacteria	5c
	1221A	Depressed DO, Bacteria	5b and 5b
	1221D	Bacteria	5b
	1221F	Bacteria	5c
	1901	Bacteria	4a
	1301	Bacteria	5c
	1302	Bacteria	5b
	1302A	Bacteria	5b
	1302B	Bacteria	5b
		Depressed DO	5c
	1202K	Bacteria	5c
	1908	Bacteria	5c
		Chloride	5c
	1245C	Bacteria	5b
	1245D	Bacteria	5b
	1245F	Bacteria	5b
	1245I	Bacteria	5b
	1421	Bacteria and Depressed DO	5c and 5c
	1911	Impaired fish community	5c
	1911B	Bacteria	5a
	1911C	Bacteria	5a
	1911D	Bacteria	5a
	1911E	Bacteria	5c
	1911H	Depressed DO	5c
	1911I	Bacteria	5c
	2102	TDS	5c
	2201 and 2202	Bacteria	5c
	2422B and D	Bacteria, Depressed DO, Dioxin, PCBs	5c, 5b, 5a, 5a
	1815	Depressed DO, Impaired habitat	CS and CS

Project Location (Statewide or Watershed and County)	Statewide with priorities for: <b>Adams and Cows Bayous</b> in Adams, Jasper, and Newton Counties; <b>Attoyac Bayou</b> in Rusk, Nacogdoches, San Augustine, and Shelby Counties; <b>Arroyo Colorado</b> in Cameron and Willacy Counties; <b>Bastrop Bayou Watershed</b> in Brazoria County; <b>Buck Creek</b> in Donley, Collingsworth, and Childress Counties; <b>Dickinson Bayou</b> in Brazoria and Galveston Counties; <b>Cedar Bayou</b> in Chambers, Liberty, and Harris Counties; <b>Concho River</b> in Irion, Runnels, Sterling, Coke, Reagan, Tom Green, Schleicher, and Concho Counties; <b>Copano Bay and the Mission and Aransas Rivers</b> in Bee, Goliad, Karnes, Refugio, and San Patricio Counties; <b>Cypress Creek</b> in Hays County; <b>Dickinson Bayou</b> in Brazoria and Galveston Counties; <b>Double Bayou</b> in Chambers County; <b>Geronimo Creek Watershed</b> in Guadalupe and Comal Counties; <b>Hickory Creek Watershed</b> in Denton and Wise Counties; <b>Pecos River Watershed</b> in Texas in Crane, Crockett, Pecos, Reeves, Terrell, Upton, and Ward Counties; <b>Plum Creek Watershed</b> in Caldwell, Hays, and Travis Counties; <b>Lampasas River Watershed</b> in Bell, Burnet, Coryell, Hamilton, Lampasas, Mills, and Williamson Counties; <b>Leon River Watershed</b> below Proctor Lake in Comanche, Hamilton, Erath, Mills, and Bell Counties; <b>Navasota River</b> in Grimes, Leon, Robertson, Brazos, Madison and Limestone Counties; <b>Nueces River</b> below Lake Corpus Christi in Nueces, Jim Wells, and San Patricio Counties; <b>Lavon Lake Watershed</b> in Collin, Grayson, Fannin, and Hunt Counties; <b>Lower San Antonio River Watershed</b> in DeWitt, Goliad, Guadalupe, Karnes, Refugio, Victoria, and Wilson Counties; <b>Peach Creek</b> in Bastrop, Caldwell, Fayette, and Gonzales Counties; <b>San Bernard River Watershed</b> in Austin, Colorado, Wharton, Fort Bend, and Brazoria Counties; <b>Lake Granbury Watershed</b> in Hood, Parker, Palo Pinto, Ranger, Erath, and Jack Counties; <b>Gilleland Creek</b> in Travis County; <b>Lake Houston Area Watersheds</b> in Grimes, Harris, Liberty, Montgomery, San Jacinto, Walker, and Waller Counties; <b>Mill Creek</b> in Washington and Austin Counties; <b>Upper Cibolo Creek</b> in Kendall County; <b>Upper Llano River</b> watershed in Edwards, Kerr, Kimble, Menard, Real, and Sutton Counties; <b>Upper Oyster Creek</b> in Fort Bend County; <b>Upper San Antonio River</b> in Bexar County; and any new watersheds identified for TMDL or WPP development.					
Key Project Activities	Hire Staff ( ); Surface Water Quality Monitoring ( ); Technical Assistance ( ); Education (X); Implementation ( ); BMP Effectiveness Monitoring ( ); Demonstration ( ); Planning ( ); Modeling ( ); Bacterial Source Tracking ( ); Other ( )					
2012 Texas NPS Management Program Reference	<ul style="list-style-type: none"> <li>• Component 1 – LTGs 1, 2, 6, 7, 8</li> <li>• Component 1 – STGs 3A, 3B, 3F, 3G</li> <li>• Components 2 &amp; 3</li> </ul>					
Project Costs	Federal	\$498,382	Non-Federal	\$332,188	Total	\$830,570
Project Management	<ul style="list-style-type: none"> <li>• Texas A&amp;M AgriLife Extension Service</li> </ul>					
Project Period	November 1, 2018- October 31, 2022					

## Part I – Applicant Information

Applicant							
Project Lead		Dr. Jake Mowrer					
Title		Assistant Professor & Specialist – Soil Nutrient and Water Resource Management					
Organization		Texas A&M AgriLife Extension Service					
E-mail Address		<a href="mailto:jake.mowrer@tamu.edu">jake.mowrer@tamu.edu</a>					
Street Address		Extension Soil and Crop Sciences 2474 TAMU					
City	College Station	County	Brazos	State	Texas	Zip Code	77843
Telephone Number		979-845-5366		Fax Number		979-845-0604	

Project Co-Lead		Michael J. Kuitu					
Title		Extension Program Specialist					
Organization		Texas A&M AgriLife Extension Service					
E-mail Address		<a href="mailto:mkuitu@tamu.edu">mkuitu@tamu.edu</a>					
Street Address		Extension Soil and Crop Sciences 2474 TAMU					
City	College Station	County	Brazos	State	Texas	Zip Code	77843
Telephone Number		979-862-4457		Fax Number		979-845-0604	

Project Partners	
Names	Roles & Responsibilities
Texas State Soil and Water Conservation Board (TSSWCB)	Provide state oversight and management of all project activities and ensure coordination of activities with related projects and TCEQ.
Texas A&M AgriLife Extension Service – Department of Soil and Crop Sciences (Extension)	Provide management of all project activities and ensure coordination of activities with related projects and TCEQ.

## Part II – Project Information

Project Type							
Surface Water	X	Groundwater					
Does the project implement recommendations made in (a) a completed WPP, (b) an adopted TMDL, (c) an approved I-Plan, (d) a Comprehensive Conservation and Management Plan developed under CWA §320, (e) the <i>Texas Coastal NPS Pollution Control Program</i> , or (f) the <i>Texas Groundwater Protection Strategy</i> ?				<table border="1"> <tr> <td>Yes</td> <td>X</td> <td>No</td> </tr> </table>	Yes	X	No
Yes	X	No					
If yes, identify the document.	Attoyac Bayou Watershed Protection Plan; A Watershed Protection Plan for the Arroyo Colorado Phase I; Buck Creek Watershed Protection Plan; Cedar Bayou Watershed Protection Plan; Concho River Watershed Protection Plan; Cypress Creek Watershed Protection Plan; Eight Total Maximum Daily Loads for Indicator Bacteria in Dickinson Bayou and Three Tidal Tributaries; Dickinson Bayou Watershed Protection Plan; Double Bayou Watershed Protection Plan; Geronimo Creek and Alligator Creeks Watershed Protection Plan; Hickory Creek Watershed Protection Plan; Fifteen TMDLs for Indicator Bacteria in Watersheds of the Lake Houston Area; Lake Granbury Watershed Protection Plan Implementation; Lampasas River Watershed Protection Plan; Implementation Plan for One Total Maximum Daily Load for Bacteria in Gilleland Creek; Leon River Watershed Protection Plan; Lower Nueces River Watershed Protection Plan; One Total Maximum Daily Load for Bacteria in the Lower San Antonio River; Two Total Maximum Daily Loads for Indicator Bacteria in the Mission and Aransas Rivers; One Total Maximum Daily Load for Bacteria in Peach Creek; Mill Creek Watershed Protection Plan; Plum Creek Watershed Protection Plan; Upper Cibolo Creek Watershed Protection Plan; Upper Llano River Watershed Protection Plan; Upper San Antonio River Watershed Protection Plan; San Bernard River Watershed Protection Plan; One TMDL for Bacteria in Upper Oyster Creek						
If yes, identify the agency/group that developed and/or approved the document.	Attoyac Bayou Watershed Partnership facilitated by TWRI and TSSWCB;  Arroyo Colorado Watershed Partnership facilitated by Texas Sea Grant, TCEQ and the U.S. EPA;  Bastrop Bayou Stakeholder Group facilitated by Houston-Galveston Area Council, Galveston Bay Estuary Program and TCEQ; University of Houston, and CDM;  Buck Creek Watershed Protection Plan facilitated by TWRI and TSSWCB;  Cedar Bayou Watershed Partnership facilitated by the H-GAC, Galveston Bay Estuary Program, TSSWCB, and U.S. EPA;  Concho River Watershed Advisory Committee facilitated by the Upper	Year Developed	2014  2007  2011  2014  2016  2011				

	<p>Colorado River Authority, TSSWCB, U.S. EPA, and Texas Institute for Applied Environmental Research;</p> <p>Cypress Creek WPP facilitated by The Meadows Center, TCEQ, Texas A&amp;M AgriLife Extension, City of Wimberley, Blue Hole, Hays Trinity Groundwater Conservation District, U.S. EPA, Hays County, Texas Clean Rivers Program, City of Woodcreek, Texas Water Development Board, TSSWCB, Guadalupe-Blanco River Authority (GBRA), and the Wimberley Valley Watershed Association;</p> <p>Eight Total Maximum Daily Loads for Indicator Bacteria in Dickinson Bayou and Three Tidal Tributaries; facilitated by TCEQ;</p> <p>Dickinson Bayou Watershed Protection plan—Dickinson Bayou Watershed Partnership, facilitated by TCEQ, and EPA;</p> <p>Double Bayou Watershed Partnership facilitated by Galveston Bay Estuary Program, TCEQ, TSSWCB, Houston Advanced Research Center, U.S. Geologic Survey, and Shead Conservation Solutions;</p> <p>Geronimo Creek Watershed Partnership facilitated by Texas A&amp;M AgriLife Extension Service and TSSWCB;</p> <p>One Total Maximum Daily Load for Bacteria in the Lower San Antonio River; facilitated by TCEQ;</p> <p>One Total Maximum Daily Load for Bacteria in Peach Creek; facilitated by TCEQ;</p> <p>Landowners and entities in the Pecos River watershed, facilitated by AgriLife Extension, TWRI and TSSWCB;</p> <p>Plum Creek Watershed Partnership and facilitated by Texas AgriLife Extension Service and TSSWCB;</p> <p>Lampasas River Watershed Partnership facilitated by Texas A&amp;M AgriLife Research and TSSWCB;</p>		<p>2015</p> <p>2012</p> <p>2009</p> <p>2016</p> <p>2012</p> <p>2008</p> <p>2008</p> <p>2008</p> <p>2008</p> <p>2008; 2014</p> <p>2012</p>
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	Landowners and entities in the Leon River watershed, facilitated by Brazos River Authority and TSSWCB;		2012
	Nueces River Watershed Partnership facilitated by the Nueces River Authority and TSSWCB		2016
	Landowners and entities in the San Bernard River watershed, facilitated by the Houston-Galveston Area Council and TCEQ;		2013
	The Lake Granbury Watershed Protection Plan Stakeholders Committee facilitated by the Brazos River Authority and TCEQ;		2011
	Mill Creek Watershed Partnership facilitated by Texas A&M AgriLife Extension Service and the TSSWCB;		2015
	Two Total Maximum Daily Loads for Indicator Bacteria in the Tidal Segments of the Mission and Aransas Rivers facilitated by the TCEQ;		2016
	Upper Cibolo Creek Watershed Partnership facilitated by the City of Boerne, Texas landowners and entities in the Upper Cibolo Creek watershed and the TCEQ;		2013
	One TMDL for Bacteria in Upper Oyster Creek prepared by the TCEQ;		2007
	Upper San Antonio River Watershed Partnership facilitated by Texas A&M AgriLife Research, San Antonio River Authority, and the TCEQ;		2007; 2014
	Hickory Creek Watershed Protection Plan facilitated by City of Denton and TCEQ;		2016
	Llano River Watershed Alliance facilitated by Texas Tech Llano River Field Station and TSSWCB		2016

Watershed Information				
Watershed or Aquifer Name(s)	Hydrologic Unit Code (12 Digit)	Segment ID	Category on 2014 IR	Size (Acres)
Adams and Cow Bayous	120100051100, 120100051001, 120100051002, 120100051003, 120100051004, 120100051005	0508, 0508A, 0508B, 0508C, 0511, 0511A, 0511B, 0511C, 0511E	4a	160,000
Arroyo Colorado (Lower, Middle and Upper)	121102080700, 121102080600, 121102080100	2201 and 2202	5c	1,169,920
Attoyac Bayou	120200050301 – 120200050307, 120200050401 – 120200050406,	0612	5b	354,629
Bastrop Bayou Tidal	120402050400	1105	5c	138,880
Buck Creek	111201050204, 111201050208, 111201050303, 111201050305 – 111201050307, 111201050401 – 111201050407, 111201050501 – 111201050502	0207	5b	184,960
Cedar Bayou Tidal	120402030101, 120402030102, 120402030103, 120402030104, 120402030105, 120402030106	0901	5c	92,800
Cypress Creek	121002030202	1815	SI	24,328
Dickinson Bayou	120402040200	1103	5a	63,287
Double Bayou	120402020100	2422B 2422D	5c 5c	89,325
Geronimo Creek (including its tributary, Alligator Creek)	121002020110, 121002020111	1804A	5c	44,152
Gilleland Creek	120903010106	1428C	4a	52,866
Lake O' The Pines	111403050401, 111403050402, 111403050403, 111403050404, 111403050405, 111403050406, 111403050407, 111403060101	0403		
Spring Creek	120401020201, 120401020205, 120401020209,	1008	5c, 5c	100,148



	120401020212, 120401020213			
Spring Branch	120401030101, 120401030102, 120401030104, 120401030105, 120401030110	1010C	5c	114,773
Mill Creek	1207010402	1202K	5c	256,000
North and South Llano River	12090202, 12090203	1415_05, 1415_06	1	605,622 604,228
Navasota River	120701030201- 204; 0307, 0309; 0401-0407; 0501- 0510; 0601-0604; 0701-0707; 0801- 0804	1209	5b	1,002,056
Plum Creek	110901050702, 110901050703, 111002030102, 111301050208, 111302090204, 120100040204, 120301010104, 120500030306, 120601020401, 120702010804, 120702010805, 120800020403, 121002030401 – 121002030403	1810	4b	288,240
Lampasas River (Lampasas River above Stillhouse Hollow Lake, Rocky Creek, Sulphur Creek, Simms Creek)	120702030101 – 120702030509	1217 1217A 1217B 1217C 1217D	5c 5b 2 2 5c	839,800
Leon River below Proctor Lake	120702010501 – 120702010509, 120702010601 – 120702010605, 120702010701 – 120702010705, 120702010801 – 120702010806, 120702010901 – 120702010908, 120702011002	1221	5c	871,488
Lower Nueces River	121101110701, 121101110705	2102	5c	116,862
Lower San Antonio River	121003030202, 121003030205, 121003030206, 121003030403,	1901	4a	776,863

	121003030404, 121003030501, 121003030503, 121003030505, 121003030604 – 121003030608, 121003040405			
San Bernard River	120904010101, 120904010102, 120904010104, 120904010109, 120904010205, 120904010207, 120904010302, 120904010304 – 120904010306, 120904010308	1301 1302 1302A 1302B	5c 5a 5c 5c	672,000
Lake Granbury	120602010601 – 0608, 120602010701 – 0706, 120602010801 – 120602010809, 120602010901 – 120602010907, 120602011001 – 120602011004, 120602011101 – 120602011110, 120602011201 – 120602011208	1205	2	1,335,138
Upper Cibolo Creek	1210030402	1908	5c	49,210
Upper Oyster Creek	120402050100, 120402050200, 120701040403	1245C 1245D 1245F 1245I	5b	65,649
Upper San Antonio River (and Apache Creek, Alazan Creek, San Pedro Creek, Sixmile Creek, Picos Creek, Martinez Creek)	1210030306	1911 1911B 1911C 1911D 1911E 1911H 1911I	5c 5a 5a 5a 5c 5c 5c	80,000

## Water Quality Impairment

Describe all known causes (i.e., pollutants of concern) and sources (e.g., agricultural, silvicultural) of water quality impairments or concerns from any of the following sources: *2014 Texas Integrated Report*, Clean Rivers Program Basin Summary/Highlights Reports, or other documented sources.

Across the state of Texas, 589 impairments to surface water bodies are documented in the 2014 Texas Integrated Report 303(d) List. The number of impairments has increased by 21 as compared to the 2012 report. Impairments due to elevated bacteria contributed to the greatest percentage of impaired water bodies (43%). Impairments documented as a result of elevated organic compounds in fish tissue were the second leading percentage at 19%, followed by dissolved oxygen (DO) related impairments (16%). Both bacteria and DO impairments are caused largely by non-point source (NPS) pollution. Other impairments documented in the 2014 Texas Integrated Report include heavy metals, sulfate, chloride, total dissolved solids, pH, and mercury and PCBs in edible tissues.

Most of the listed project location watersheds are on the 303(d) list for bacteria and/or dissolved oxygen. Non-point sources of these impairments may originate from agricultural activities or from activities in urban environments. The sources are diffuse and widespread. The activities that contribute to all forms of NPS pollution are diverse, occur daily, and, in many cases, are anthropogenic, being carried out by all Texans.

## Project Narrative

### Problem/Need Statement

All watersheds in Texas are threatened by nonpoint source (NPS) pollution which is detrimental to the valuable water resources of the state. To help combat this threat, federal and state water resource management agencies have adopted the “watershed approach” for managing water quality. One vital component of this approach involves engaging local stakeholders to become actively involved in planning and implementing water resource management and protection programs in their watershed. To support this need for stakeholder involvement, the Texas Watershed Steward (TWS) program was initiated to increase citizen understanding of watershed processes and to foster increased local participation in watershed protection/management activities.

Initial pilot testing of the TWS program took place in conjunction with TSSWCB project 05-05 entitled, *A Community-Based Water Quality Curriculum Which Enhances Stakeholder Involvement in Watershed Protection Initiatives: A Pilot Project* in the Plum Creek watershed. This piloting period provided an opportunity to refine the curriculum tools and components in preparation for statewide implementation of the program. Through TSSWCB projects 07-09, *Statewide Implementation of the Texas Watershed Steward Program*; 11-05, *Continued Statewide Delivery of the Texas Watershed Steward Program*; 15-55, *Additional Delivery of the Texas Watershed Steward Program*; and 15-05, *Extended Delivery of the Texas Watershed Steward Program*, additional workshops were held across the state. Moreover, the TWS curriculum was continually updated and refined. In total, 92 workshops were conducted through the end of FY2017, reaching over 3,977 people. Feedback from TWS workshops has been extremely positive and additional organizations and community groups from across the state have requested training events to enhance public understanding of local watershed issues and to support community water management and protection activities such as WPPs and TMDLs.

In the publication titled, *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*, the U.S. Environmental Protection Agency (EPA) identifies nine important elements of effective WPPs. One of the most critical elements focuses on information and education and recognizes the importance of enhancing public understanding and encouraging early and continued participation in the watershed planning process.

The TWS program will continue to function to provide this vital information/education component and, in addition, will strive to facilitate greater, more effective, and sustained participation of stakeholders in watershed planning, implementation, and management efforts. The TWS program is a fundamental component of the State's implementation of the *Texas NPS Management Program*.

While face-to-face training events are highly effective, and preferred in impaired watersheds, participation can be reduced due to practical limitations related to time and/or travel to the event location for individuals with jobs, family commitments, or other constraints. Computer-based instruction, on the other hand, allows users to proceed through interactive program content at an individualized pace, adding flexibility and personalization to the learning experience. In February 2011, an online TWS program that incorporates all aspects of the TWS face-to-face training was officially launched as part of project 07-09. Under project 11-05, the online TWS course was redesigned to offer greater interactive features and an education platform with audio voice over instruction.

The TWS program is a unique and valuable water education resource for the citizens of Texas. This project will continue statewide implementation of the TWS program to support and enhance current and future watershed management and protection efforts by all agencies and organizations in Texas.

## Project Narrative

### General Project Description (Include Project Location Map)

This project will continue statewide implementation of the TWS program by conducting watershed-based trainings in selected watersheds, and enhancing access to the program through the computer-based distance training tools.

*Watershed-Based Trainings.* The watershed-based trainings will be delivered as single-day training events and will focus on enhancing understanding of watershed systems, watershed impairments, methods for improving watershed function, and community-driven watershed protection and management. Both 4-hour and 7-hour versions of the single-day course will be offered. Curriculum content will be tailored as much as possible to each specific watershed so participants may better understand and relate to their particular watershed processes, causes of impairment(s), and the tools that can be employed to prevent and/or resolve them. At the conclusion of the training, participants will receive a certificate of completion recognizing them as Texas Watershed Stewards.

As a part of the training, participants will be educated on the importance of watershed protection and the need for active participation of local stakeholders in WPP and/or TMDL development processes. A major goal of the program will be to foster the formation of local groups that take an active role in leading and expanding watershed education efforts and promoting watershed protection activities in their community. Groups will be encouraged to identify key issues and activities to undertake, and will be made aware of various programs available through Extension (e.g., soil testing campaigns, water testing campaigns, Master Gardener, Master Naturalist, Texas Well Owner Network, Lone Star Healthy Streams) and other agencies and organizations (e.g., River Authorities, Texas Stream Team).

Extension will work in concert with state and local organizations to select and schedule locations for the watershed-based TWS training events. Priority will be given to watersheds currently engaged in WPP or TMDL processes and those planning future watershed efforts. Additional watersheds may be selected based on impairment status, environmental sensitivity, and/or other priority issues identified by a partner agency or

organization. Preliminary planning has already been conducted with several river authorities and partner entities to identify target watersheds.

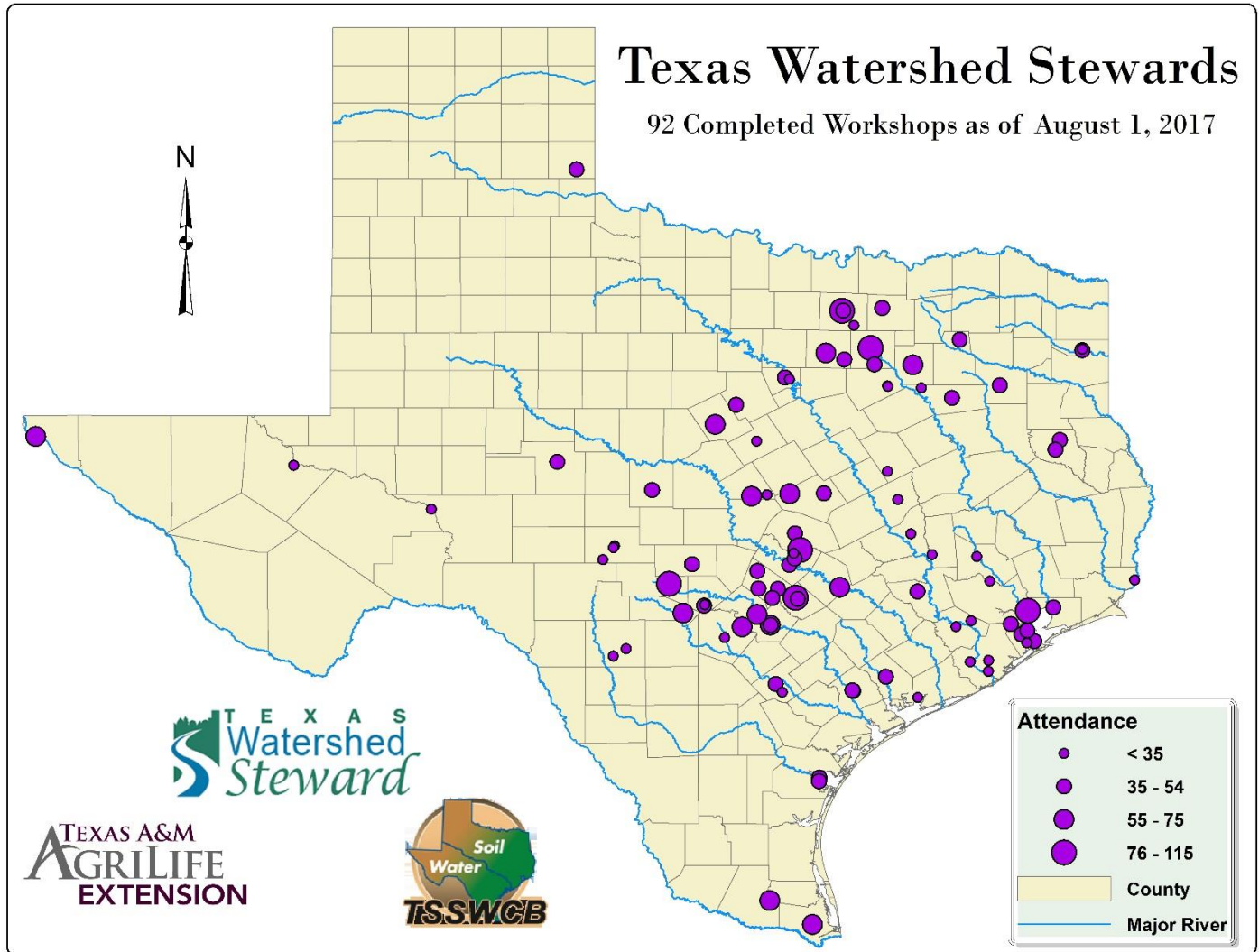
Due to the size of many watersheds in the state, the breadth of water quality issues in those watersheds, and efforts to enhance continued citizen involvement, TWS trainings may be offered multiple times (2-3) and at different locations within selected watersheds. A minimum of 10 workshops will be conducted annually in selected watersheds.

*Computer-Based Tools.* The computer-based training components of TWS will be advertised on a statewide basis. Citizens unable to attend face-to-face events will be encouraged to utilize the web-based version of the training. CD-ROMs will be distributed upon request to individuals in areas where Internet access is limited. The web-based distance learning tool is available on the TWS website (<http://tws.tamu.edu>). Registered individuals that complete the training via online or computer-based access will also receive a certificate once pre- and post-tests have been completed.

*Evaluation and Assessment.* Both the face-to-face and computer-based training programs will include an evaluation component to assess program effectiveness and allow on-going assessment and enhancement of curriculum content to achieve project goals. A two-phase evaluation approach will be used to measure both knowledge and behavior changes of individuals participating in the program.

Phase 1. A pre-/post-test evaluation strategy will be utilized for both the face-to-face and computer-based training programs. A combination of multiple choice, true/false, and short answer questions will be used to quantify knowledge gained by participants. In addition, the post-test will include 'satisfaction' and 'intention to adopt' questions. Tests will be designed and evaluated using scanning technology and software to expedite analysis and minimize data entry errors.

Phase 2. A six-month follow-up evaluation will also be administered to participants online. Emails will be sent to program participants to ascertain what practices were actually adopted six months after participating in the program.



Page 13 of 22

Tasks, Objectives and Schedules						
Task 1	Project Administration					
Costs	Federal	\$29,341	Non-Federal	\$19,571	Total	\$48,912
Objective	To effectively administer, coordinate and monitor all work performed under this project including technical and financial supervision and preparation of status reports.					
Subtask 1.1	Extension will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 1 <sup>st</sup> of January, April, July and October. QPRs shall be distributed to all Project Partners.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 1.2	Extension will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 1.3	Extension will host coordination meetings or conference calls, at least quarterly, with Project Partners to discuss project activities, project schedule, communication needs, deliverables, and other requirements. Extension will develop lists of action items needed following each project coordination meeting and distribute to project personnel.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 1.4	Extension will develop a Final Report that summarizes activities completed and conclusions reached during the project. The report will also include the extent to which project goals and measures of success have been achieved.					
	Start Date	Month 1		Completion Date	Month 48	
Deliverables	<ul style="list-style-type: none"><li>• QPRs in electronic format</li><li>• Reimbursement Forms and necessary documentation in hard copy format</li><li>• Project website</li><li>• Final Report in electronic and hard copy formats</li></ul>					

Tasks, Objectives and Schedules						
Task 2	Coordinate and deliver watershed-based TWS trainings in selected watersheds throughout Texas.					
Costs	Federal	\$388,642	Non-Federal	\$258,981	Total	\$647,623
Objective	Facilitate statewide delivery of the TWS program to increase local understanding of the forces which can adversely impact water resources and to provide access to the knowledge and tools which can be employed to prevent and/or resolve them. Enhance stakeholder involvement in WPP and TMDL development processes by educating citizens about their watersheds and the opportunities and critical importance of local stakeholder involvement. Promote the formation of local watershed action groups to take leadership for local watershed education and protection activities.					
Subtask 2.1	Extension will employ an Extension Program Specialist who will serve as the full-time TWS Program Coordinator and will be responsible for the general oversight and coordination of all project activities and for promoting, coordinating, and delivering the TWS watershed-based training events and computer-based tools.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 2.2	Extension will work in concert with state and local organizations to select locations for the watershed-based TWS training events. Extension will coordinate efforts with state agencies and organizations involved in WPP/TMDL processes or who are planning future WPP/TMDL processes in specific watersheds. Additional watersheds may be selected based on impairment status, environmental sensitivity, and/or other priority issues identified by a partner agency or organization. Extension and TSSWCB will periodically make a collaborative decision to re-prioritize and add to/remove from the list of watersheds.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 2.3	Extension will actively market watershed-based TWS trainings through news releases (A&M AgriLife News and local media outlets), Internet postings, newsletter announcements, public/conference presentations, flyers, etc., to enhance awareness and utilization.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 2.4	Extension will deliver at least 10, 4-hour or 7-hour TWS training events in selected watersheds annually.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 2.5	Extension will foster the establishment of local watershed action groups spawned by the TWS program. Extension will work with state and local organizations to develop and/or provide more detailed, resource specific education and training resources and action oriented activities that can be delivered and/or undertaken in watersheds where those issues are identified as most significant.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 2.6	Extension will attend and participate in meetings, as appropriate, in order to communicate project goals, activities and accomplishments to affected parties. Such meetings may include, but are not limited to, Clean Rivers Program Basin Steering Committees, the Texas Watershed Planning Short Course, Texas Watershed Coordinator Roundtables, and the TSSWCB Regional Watershed Coordination Steering Committee.					
	Start Date	Month 1		Completion Date	Month 48	
Deliverables	<ul style="list-style-type: none"><li>List of specific watersheds where TWS trainings have been and will be implemented, updated routinely.</li><li>Schedules, agendas, and attendance lists for TWS trainings.</li><li>Copies of press releases, newspaper articles, newsletters, public information statements, etc., as developed and disseminated.</li></ul>					



Tasks, Objectives and Schedules						
Task 3	Distribute and manage computer-based training tools for the TWS program.					
Costs	Federal	\$53,871	Non-Federal	\$35,923	Total	\$89,794
Objective	Manage, update, and promote web-based TWS curriculum and associated program materials to expand participation in the TWS program by 1) supporting different adult learning styles and preferences, 2) providing flexible learning opportunities for interested citizens who have time and/or mobility constraints, and 3) enabling ready access to program resources statewide (i.e., watersheds not targeted for WPP or TMDL development).					
Subtask 3.1	Extension, with assistance from AgriLife Communications, will manage and update web-based versions of the TWS program. Program information will be reviewed every six months and updates made as needed.					
	Start Date		Month 1	Completion Date		Month 48
Subtask 3.2	Extension will actively market computer-based TWS resources through news releases (AgriLife News and local media outlets), Internet postings, newsletter announcements, public/conference presentations, flyers, etc., to enhance utilization of the computer-based tools.					
	Start Date		Month 1	Completion Date		Month 48
Subtask 3.3	Extension will track website usage and on-line course completion.					
	Start Date		Month 1	Completion Date		Month 48
Deliverables	<ul style="list-style-type: none"><li>• Press releases, newspaper articles, newsletters, public information statements, etc., as developed and disseminated.</li><li>• Tracking report of website usage.</li><li>• List of web-based TWS curriculum completion certificate awardees.</li></ul>					

Tasks, Objectives and Schedules						
Task 4	Evaluate the effectiveness of watershed- and computer-based TWS training tools.					
Costs	Federal	\$26,528	Non-Federal	\$17,713	Total	\$44,241
Objective	To measure both knowledge and behavior changes of individuals participating in the TWS program using a phased evaluation approach.					
Subtask 4.1	Extension will conduct pre-/post-test evaluations of watershed- and computer-based trainings to measure knowledge gained by participants regarding watershed principles, impairments, and appropriate BMPs to reduce NPS pollution; to determine participant’s intentions to change their behavior as a result of the program; and to evaluate participant satisfaction with the program.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 4.2	Extension will administer a 6-month follow-up evaluation to assess actions taken and practice adoption by participants.					
	Start Date	Month 1		Completion Date	Month 48	
Subtask 4.3	Extension will analyze results obtained from Phase 1 (pre-/post-tests) and Phase 2 (6-month follow-up) evaluations using descriptive, correlational, and analysis of variance statistical procedures. Results will be used to periodically evaluate and modify TWS program materials and incorporated into the final report.					
	Start Date	Month 1		Completion Date	Month 48	
Deliverables	<ul style="list-style-type: none"><li>• Pre-/post-test evaluations for watershed- and computer-based TWS trainings.</li><li>• Six-month follow-up evaluation assessments for watershed- and computer-based TWS trainings.</li><li>• Results from evaluations</li></ul>					

### **Project Goals (Expand from Summary Page)**

This project will continue statewide implementation of the TWS program through watershed-based trainings and computer-based distance education components. The broad project goals are to:

- Increase stakeholder involvement in WPP and/or TMDL development processes.
- Promote healthy watersheds by increasing citizen awareness, understanding, and knowledge about the nature and function of watersheds, potential impairments, and watershed protection strategies to minimize NPS pollution.
- Enhance interactive learning opportunities for watershed education across the state and establish a larger, more well-informed citizen base.
- Empower individuals to take leadership roles in community and watershed-level water resource issues.

### **Measures of Success (Expand from Summary Page)**

- Delivery of a minimum of 32 watershed-based TWS trainings in selected watersheds. Workshops may be delivered virtually on a singular basis if determined necessary by TSSWCB and Texas A&M AgriLife Extension in response to local, state, or agency guidelines concerning COVID-19.
- Number of citizens participating in watershed-based TWS trainings.
- Delivery of the computer-based training components of the TWS program.
- Number of citizens utilizing the computer-based training components of the TWS program.
- Increased knowledge and understanding of watershed management by individuals participating in the program, as measured by pre-/post-tests and 6-month follow-up evaluations.
- Increased adoption of BMPs as indicated by pre-/post-tests and 6-month follow-up evaluations.

<b>2012 Texas NPS Management Program Reference (Expand from Summary Page)</b>
<b>Components, Goals, and Objectives</b>
<p>Component 1 – Explicit short- and long-term goals, objectives and strategies that protect surface...water</p> <p>LTG: To protect and restore water quality from NPS pollution through assessment, implementation and education</p> <ol style="list-style-type: none"> <li>1. Focus NPS abatement efforts...and available resources in watersheds identified as impacted by NPS pollution.</li> <li>2. Support the implementation of state, regional, and local programs to prevent NPS pollution through assessment...and education.</li> <li>6. Develop partnerships, [and] relationships...to facilitate collective, cooperative approaches to manage NPS pollution.</li> <li>7. Increase overall public awareness of NPS issues and prevention activities.</li> <li>8. Enhance public participation and outreach by providing forums for...ideas and concerns about the water quality management process.</li> </ol> <p>STG Three – Education: Conduct education and technology transfer activities to help increase awareness of NPS pollution and activities which contribute to the degradation of water bodies... by NPS pollution.</p> <ul style="list-style-type: none"> <li>• Objective A – Enhance existing outreach programs at the state, regional, and local levels to maximize the effectiveness of NPS education.</li> <li>• Objective B – Administer programs to educate citizens about water quality and their potential role in causing NPS pollution.</li> <li>• Objective F – Implement outreach and education activities identified in the <i>Texas Coastal NPS Pollution Control Program</i> to prevent and abate NPS impacts to coastal resources.</li> <li>• Objective G – Implement public outreach and education to maintain and restore water quality in water bodies impacted by NPS pollution.</li> </ul>
Component 2 – Working partnerships...to appropriate State...regional, and local entities, private sector groups, and Federal agencies.
Component 3 – Balanced approach that emphasizes both statewide NPS programs and on-the-ground management of individual watersheds

<b>EPA State Categorical Program Grants – Workplan Essential Elements</b>
<b>FY 2018-2022 EPA Strategic Plan Reference</b>
Strategic Plan Goal – Goal 1 Core Mission
Strategic Plan Objective – Objective 1.2 Provide for Clean and Safe Water

## Part III – Financial Information

Budget Summary			
Federal	\$	498,382	% of total project
Non-Federal	\$	332,188	% of total project
Total	\$	830,570	Total
			100%
Category	Federal		Non-Federal
Personnel	\$	252,686	\$ 161,312
Fringe Benefits	\$	74,001	\$ 54,195
Travel	\$	24,324	\$ 0
Equipment	\$	0	\$ 0
Supplies	\$	24,100	\$ 0
Contractual	\$	0	\$ 0
Construction	\$	0	\$ 0
Other	\$	58,265	\$ 0
Total Direct Costs	\$	433,376	\$ 215,507
Indirect Costs ( $\leq 15\%$ )	\$	65,006	\$ 60,342
Unrecovered IDC	\$	0	\$ 56,339
Total Project Costs	\$	498,382	\$ 332,188
			\$ 830,570

Budget Justification (Federal)		
Category	Total Amount	Justification
Personnel	\$ 252,686	<ul style="list-style-type: none"> <li>• Project Specialist (0.1 FTE yrs. 1-2; \$5,000)</li> <li>• Program Specialist (1.0 FTE yrs. 1-4; \$241,405)</li> <li>• Student Assistant (0.15 FTE yrs. 1.75-4; \$6,281)</li> </ul>
Fringe Benefits	\$ 74,001	Fringe benefits are calculated at a rate of 16.8% of salary to cover FICA, UCI, WCI, and retirement. An additional amount of \$746/month (prorated by % FTE) is calculated for group medical insurance. These estimates are in accordance with the TAMUS Office of Budget and Accounting estimating procedures established for FY2018.
Travel	\$ 24,324	Funds will be used to support travel to and from TWS training events: up to 12 locations/year x 1 night x 4 individuals (Program Specialist and other Extension personnel necessary for support of training events) x per diem and lodging + mileage at the state rate for trips ranging from 100-400 miles roundtrip, fuel, parking, travel fees (at the State rate), and/or rental vehicles (\$36,288); Travel to state and national meetings and conferences: 10 trips x 1 night x 1 individual x per diem and lodging + mileage, fuel, airfare, taxi, parking, travel fees (at the State rate), and/or vehicle rental (\$18,036).
Equipment	\$ 0	N/A
Supplies	\$ 24,100	Certificates: 1 certificate per participant x 50 participants/workshop x 12 workshops/yr. x \$1.25 per certificate (\$2,250), plastic bins (\$140); printing costs for TWS training events: \$333 per event x up to 12 events/yr. (\$12,000); rainfall simulator - runoff troughs (\$110); brochures and fact sheets: 1 brochure and factsheet per participant x 50 participants/workshop x 12 workshops/yr. x \$1.16 per brochure and factsheet (\$2,100); program supplies including general office supplies and sanitation/backup PPE supplies required to be made available at in-person events (\$7,500)
Contractual*	\$ 0	N/A
Construction	\$ 0	N/A
Other	\$ 58,265	<ul style="list-style-type: none"> <li>• Printing costs for TWS curriculum manuals (up to 12 locations/year x 4 years x 35 participants/training x \$16.67/manual = \$27,750)</li> <li>• Video equipment with live-streaming and video conference capability for broadcasting in-person, TWS workshops to virtual attendees: necessary equipment may include, but is not limited to, camera, tripod, microphone, encoder, case(s), and cables. (\$2,250)</li> <li>• Wireless Hotspot and service plan through Texas A&amp;M Telecommunications (\$36 process/order charge + \$37.99/month x 28 months= (\$1,100)</li> <li>• ADP/Computer Services (3,150)</li> <li>• Software licensing fees (1,700)</li> <li>• Projector and screen (\$1,000)</li> <li>• Advertising and Postage (\$4,815)</li> <li>• 1 cell phone and service plan (\$3,150)</li> <li>• Certified planners CEU trainer fees (\$3,600)</li> <li>• Conference Fees (\$3,000)</li> <li>• Facility Rental: \$187.5/event x 12 events/yr. (\$6,750)</li> </ul>
Indirect	\$ 65,006	15% of Total Federal Direct Costs per TSSWCB FY2018 RFP for CWA, §319(h) NPS Grant Program

Budget Justification (Non-Federal)		
Category	Total Amount	Justification
Personnel	\$ 161,312	Administrative Assistant (0.10 FTE yrs. 1-3) Extension Regional Program Leader (0.015 FTE yrs. 1-3) Media Relations Specialist (0.0125 FTE yrs. 1-3) One Extension District 3 County Extension Agent (0.0315 FTE yrs. 1-3) Three Extension District 4 County Extension Agents (0.0315 FTE yrs. 1-3) One Extension District 5 County Extension Agent (0.0315 FTE yrs. 1-3) Four Extension District 6 County Extension Agents (0.0315 FTE yrs. 1-3) Three Extension District 7 County Extension Agents (0.0315 FTE yrs. 1-3) Four Extension District 8 County Extension Agents (0.0313 FTE yr. 1 then 0.0314 FTE yrs. 2-3) Three Extension District 9 County Extension Agents (0.0315 FTE yrs. 1-3) Seven Extension District 10 County Extension Agents (0.0315 FTE yrs. 1-3) One Extension District 11 County Extension Agent (0.0315 FTE yrs. 1-3) One Extension District 12 County Extension Agent (0.0315 FTE yrs. 1-3)
Fringe Benefits	\$ 54,195	Fringe benefits are calculated at a rate of 16.8% of salary to cover FICA, UCI, WCI, and retirement. An additional amount of \$746/month (prorated by % FTE) is calculated for group medical insurance. These estimates are in accordance with the TAMUS Office of Budget and Accounting estimating procedures established for FY2018.
Travel	\$ 0	N/A
Equipment	\$ 0	N/A
Supplies	\$ 0	N/A
Contractual*	\$ 0	N/A
Construction	\$ 0	N/A
Other	\$ 0	N/A
Indirect	\$ 60,342	28% of Total Non-Federal Direct Costs
Unrecovered IDC	\$ 56,339	Unrecovered Indirect Costs of 13% of Total Federal Direct Costs (difference between project-allowed indirect costs (15%) and the standard Texas A&M AgriLife Extension Service indirect cost rate of (28%))